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Handmade pottery of the Merovingian and Carolingian periods at Wijnaldum

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THE EXCAVATIONS AT WIJNALDUM

VOLUME 2:
HANDMADE AND WHEEL-THROWN POTTERY
OF THE FIRST MILLENNIUM AD

Annet Nieuwhof (editor)

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The Excavations at Wijnaldum

Volume 2:

Handmade and Wheel-thrown Pottery of the first Millennium AD

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University of Groningen / Groningen Institute of Archaeology
& Barkhuis Publishing
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Terpen en Wierden land

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Preface

Wijnaldum is nowadays an unassuming rural village in the north of the province of Friesland, no more than a small dot on the map of the Netherlands. But during the Early Middle Ages, this was a lively political centre, a kingdom, with intensive contacts with other kingdoms along the North Sea coasts, and with the Frankish realm to the south.

The search for the king that resided at Wijnaldum was the major goal of the excavations that were carried out at the terp Wijnaldum-Tjitsma between 1991 and 1993. These excavations yielded a wealth of information, although tangible remains of the king or a royal residence were not found. The first results and an overview of the habitation phases were published in 1999: Volume 1 of *The Excavations at Wijnaldum*. However, major material categories such as animal bones, metal objects and pottery were left waiting until a next volume. As time went on, researchers became occupied with other work, and Wijnaldum faded into the background.

In 2014, a grant from the Dutch *Waddenfonds*, in the context of the project *Terpen- en Wierdenland. Een verhaal in ontwikkeling* (The terp region. A developing story) made it possible to resume the analysis and publication of the results of the excavations at Wijnaldum, and publish a second volume on the ceramic assemblage. Resuming the analysis of the pottery was by no means easy. The digital archive had become partly inaccessible, and the first drafts of texts, which seemed of topical interest at the time, had lost their relevance due to advancing insights, and needed updates and additions. As one of the authors, Ernst Taayke, wrote to me: The Wijnaldum project is like a pot that has fallen to pieces; the broken pot is being reconstructed as completely as possible now, after 25 years, although we do not have all the shards anymore.

Despite some missing shards, we did succeed in completing this volume. It not only includes major chapters on the pottery of the Roman Period and the Early Middle Ages (Chapters 2-7), but also an extensive overview of the research carried out in Wijnaldum (Chapter 1), an illuminating account of new survey research at Wijnaldum, which provides additional information on the habitation history (Chapter 8), and a synthesis, which presents an overview of the habitation history at Wijnaldum, with special attention to the search for the king on the basis of finds of precious metals and of the pottery assemblage (Chapter 9).

Several organisations financed and successfully cooperated in the Waddenfonds project *Terpen- en Wierdenland. Een verhaal in ontwikkeling*: the Terp Research group of the Groningen Institute of Archaeology (University of Groningen), the Province of Fryslân (Friesland), the Province of Groningen, Landschapsbeheer Groningen, Landschapsbeheer Friesland, the Museum Wierdenland at Ezinge, and the municipalities of De Marne and Eemsmond (now merged into the municipality of Het Hogeland), and Delfzijl. The present book was financed by this project. We thank these organisations for their generosity.

We would also like to thank all those who allowed us to use illustrations: the Fries Museum at Leeuwarden, Johan Nicolay, Saartje de Bruijn, Frans Andringa, Beeldredactie Leeuwarder Courant, Frans de Vries (Toonbeeld), the Northern Archaeological Depot at Nuis (notably Jelle Schokker for all kinds of help, and Henk Faber Bulthuis who made photos), Peter Vos and Sieb de Vries (Deltares/TNO), and Mirjam Los-Weijns and Siebe Boersma of the Groningen Institute of Archaeology (GIA, University of Groningen), who made and edited many object drawings. Siebe Boersma designed the layout of the book. Johan Nicolay read an earlier draft of the synthesis and gave valuable comments. Xandra Bardet not only read and corrected the English texts, but also pointed out inconsistencies. We owe them all our sincere gratitude.

On behalf of the authors,
Annet Nieuwhof
Editor

7. Handmade pottery of the Merovingian and Carolingian periods at Wijnaldum

Jan de Koning, Annet Nieuwhof and Danny Gerrets

7.1 Classification and method

Handmade, probably locally produced pottery from the Merovingian and Carolingian periods is by far the largest group within the total body of pottery from the excavation of Wijnaldum-Tjitsma. This pottery makes up 45.1% of the total number of fragments and 26.8% of the total weight. In numbers, 32,197 fragments are attributed to this group, weighing over 210 kg.¹ From these figures it can be inferred that this pottery was fragmented more than the handmade pottery from earlier periods.

The handmade pottery of the Merovingian and Carolingian periods largely consists of *Kugeltopf* or globular pots, and of ovoid pots with flat, lenticular or 'wobbly' bases. The ovoid pot belongs to the Merovingian period, and to the group of Hessens-Schortens or A3/A4 ware that was described by Taayke in Chapter 4, while globular pots occur from the Carolingian period onwards. Globular pots are thought to have developed in the coastal area of the Netherlands, where they replaced the earlier Hessens-Schortens ware in the early 8th century. Globular pots were also adopted in the coastal areas of northwestern Germany, but here they replaced the earlier types in the course of the 8th century, so slightly later than in the Netherlands.²

Besides ovoid and globular pots, neckless bowls and skillets were in use in this period, the former from the Merovingian period, the latter from the Carolingian period onwards. These main shapes fit within the 'Dorestad' classification drawn up by Van Es and Verwers for the Hoogstraat I pottery:³

- Type H I. *Kugeltopf* or globular pot
- Type H II. Skillet
- Type H III. *Eitopf* or ovoid pot
- Type H IV. Neckless bowl
- Type H V. Crucible⁴

Within type H I, a further distinction was made between different rim shapes:⁵

- Type H IA: with a simple rounded rim
- Type H IB: with a horizontally flattened rim
- Type H IC: with an obliquely flattened (bevelled) rim

Three main fabrics can be distinguished: grit-tempered fabric (h1), shell-tempered fabric (h2) and fine ware, tempered with fine or coarse sand (h3).⁶ A fourth fabric (h4), tempered with grog (crushed potsherds), is unknown from Dorestad but it does occasionally occur in the northern coastal area, not only at Wijnaldum-Tjitsma, but also, for instance, at Ezinge.⁷

Ovoid (H III) and early (as opposed to later medieval) globular pots (H I) have many characteristics in common: they are usually thick-walled and have a convex base, a flowing transition from base to body, a curved profile, and an everted neck.⁸ The distinction between early globular pots and ovoid pots is hard to make on the basis of only rim sherds, since the main difference is the shape of the pot: ovoid or round. Moreover, even if complete pots are available, the difference may be hard to tell, since some ovoid pots are nearly globular, and globular pots are not always perfectly round; some are pear-shaped or ovoid.⁹ Wijnaldum's handmade pottery of early-medieval date includes only two complete archaeological profiles (Figures 7.8 and 7.22). Ovoid and globular pots often cannot be distinguished on the basis of rim shapes, but ovoid pots can sometimes be identified by their shorter rims and the lack of a shoulder.

Besides the Dorestad typology, several other typologies are available for early-medieval handmade pottery. The typology designed by Roorda for the pottery assemblage from the settlement of Gasselte in Drenthe¹⁰ is partly based on the Dorestad typology, with the addition of late-medieval types. It is a useful typology for pottery

1 See Chapter 2, Table 2.1.

2 Verhoeven 1998, 56.

3 Van Es & Verwers 1980, 112-124.

4 Crucibles, type V in the Dorestad typology, were discussed as a group in Chapter 3. Two of these crucibles belong to the Carolingian period.

5 Van Es & Verwers 1980, 112.

6 Van Es & Verwers 1980, 59.

7 For Ezinge, see Nieuwhof 2014, fig. 52.

8 Van Es & Verwers 1980, 112.

9 See also Verhoeven 1998, 8ff.

10 Roorda 1987; published in Kooi 1995.

Fig. 7.1 Rim sherds of globular pots in different fabrics. Top: stone-grit tempered fragments (h1), type H 1A; bottom: white-speckled, shell-tempered fragments (h2), type H 1B. Photos J. de Koning.

assemblages from the northern Netherlands that cover a longer period, such as that of Ezinge.¹¹

An objective way to describe the pottery of this period was the coding system developed by Steuer for northern Germany; this classification was applied to the pottery from Haithabu, Liebenau, Elisenhof and Warendorf.¹² In the Netherlands, Verhoeven applied this system to the early-medieval handmade pottery from several Dutch sites, e.g. Midlaren in Drenthe and Leiderdorp-De Plantage in Zuid-Holland.¹³ The advantage of this method is not only that the codes are objective, but also that they can be easily compared.

In processing the handmade pottery, a first chronological distinction was made on the basis of shape and fabrics (Table 7.1). Categories are:

- MH (Merovingian-period handmade pottery): proto-globular or ovoid pots;
- MCH (Merovingian-/Carolingian-period handmade pottery): (wall) sherds of either ovoid or globular pots;
- CH (Carolingian-period handmade pottery): globular or globular-like crockery (including bowls and skillets with similar fabrics).

The Dorestad classification was our primary tool for the identification of types in the Wijnaldum assemblage; some variants that commonly occurred were added, in hopes of finding out their significance (Table 7.2). At a later stage, we tested this classification by assigning “Steuer codes” to the Dorestad types, and comparing the results with the assemblage of Warendorf (section 7.5).

¹¹ Nieuwhof 2014.

¹² Röber 1990; Steuer 1971; 1973; 1974; 1975; 1979; Verhoeven 2008, 311.

¹³ Verhoeven 1998, 11ff; 2008; 2016.

Table 7.1 Distribution of fabrics of wall, rim and base sherds of handmade, early-medieval pottery. A first distinction was made between Merovingian handmade (MH), Merovingian or Carolingian handmade (MCH) and Carolingian handmade (CH). For many wall fragments the distinction between MH and CH could not be made; these are included in category MCH.

Fabric	Temper	n	%	Weight in g	%
<i>Merovingian Handmade</i>					
h1	Stone grit	367	1.1	3,550	1.7
h1f	Stone grit, fine	110	0.3	1,552	0.7
h1g	Stone grit, coarse	100	0.3	1,732	0.8
h2	Shell grit	13	0	186	0.1
h3	Sand	11	0	160	0.1
h4	Grog	3	0	55	0
	Combinations	5	0	26	0
Total MH		609	1.9	7,261	3.4
<i>Merovingian-Carolingian Handmade</i>					
h1	Stone grit	879	2.7	4,884	2.3
h1f	Stone grit, fine	2,939	9.1	12,702	6.0
h1g	Stone grit, coarse	530	1.6	5,329	2.5
h4	Grog	7	0	23	0
Total MCH		4,355	13.5	22,938	10.9
<i>Carolingian Handmade</i>					
h1	Stone grit	7,856	24.4	52,969	25.1
h1f	Stone grit, fine	2,586	8.0	15,472	7.3
h1g	Stone grit, coarse	732	2.3	9,633	4.6
h2	Shell grit	10,698	33.2	73,399	34.7
h2s	Shell grit, local variant	782	2.4	5,101	2.4
h3	Tempered with sand	3,454	10.7	17,448	8.3
h4	Tempered with grog	167	0.5	1,181	0.6
	Combinations	940	2.9	5,553	2.6
Total CH		27,215	84.6	180,756	85.7
Total MH+MCH+CH	all fabrics	32,179	100	210,955	100

7.2 Fabrics

Tempering materials

Most of the fragments were tempered with grit, shell or sand (h1, 2 and 3), and some with grog (h4) (Figure 7.1). Some variations in fabrics were included in this basic classification. Within grit-tempered fabric h1, a fine (h1f) and a coarse variety (h1g) were distinguished. Within the shell-tempered fabrics (h2), a variant was added with a softer fabric and thicker walls (h2s, s for soft). It is reminiscent of the indigenous pottery of the Roman period, although there certainly was no continuity in the use of shell-tempered ware over this long period. It might represent an early or local stage in the development of shell-tempered globular ware. No variants were distinguished within the sand-tempered fabric (h3).

Similar variability was observed in the Dorestad pottery assemblage, but there the variants were included in the basic fabrics of the typology. For instance, a fine variety with smoothed surface was included in the grit-tempered fabrics. Grit was occasionally added to shell-tempered fabrics, and grit or shell to sand-tempered fabrics.¹⁴ The fabrics of the early-medieval handmade pottery of Wijnaldum appear to be more variable than the classification allows for. Combinations among almost all types of tempering material were found in different ratios (Table 7.1). Although the total number of these mixed-temper fragments is quite

large, with 940 sherds weighing over 5.5 kg, it is only a relatively small part of the total number and weight of potsherds from this period, covering just 2.9% of the total number and 2.6% of the total weight of the early-medieval handmade group (see Table 7.1).

Date and origin

We assume that most of the early-medieval handmade pottery was produced locally. Of the tempering materials in this pottery at Wijnaldum, only shell and grog were locally available. Boulders that could be crushed to produce grit and sand had to be supplied from inland Pleistocene areas. Nonetheless, grit was the most commonly used tempering material during the Merovingian and Carolingian periods; this indicates that availability was not a problem.

Shell-tempered ware was not used throughout the early-medieval period. Since the Dorestad-Hoogstraat I publication of 1980, it has been thought to date to the late 8th and 9th centuries, and probably also somewhat earlier and later.¹⁵ However, the Hoogstraat I site cannot provide a reliable end date, as it was abandoned around AD 900.¹⁶ In other settlements, it is found well into the 10th century.¹⁷ Although the Wijnaldum material contains only thirteen fragments of fabric h2 (shell-tempered ware) within the early group MH, it is possible that this fabric came into use earlier than is commonly assumed, also at Wijnaldum.

¹⁵ Van Es & Verwers 1980, 22. See also Verhoeven 1998, 30-31.

¹⁶ Van Es & Verwers 2015, 300-301.

¹⁷ Verhoeven 2008, 309.

¹⁴ Van Es & Verwers 1980, 59.

Fig. 7.2 Shell-tempered rim sherd with recognizable fragments of cockle (*Cerastoderma*) shells. Scale 1:1. Photo J. de Koning.

Most of the shell-tempered wall sherds were classified as CH because of the assumed late date of this ware. At Ribe in Denmark shell-tempered globular ware was found within stratified layers dating no later than around AD 770.¹⁸ Steuer assumed that production of this kind of pottery started around the middle of the 8th century.¹⁹ Stilke dates the substitution of the earlier globular pots by shell-tempered ware in the area between Ems and Weser to the end of the 8th century.²⁰

The shell species can often be identified as belonging to the genus of *Cerastoderma* or cockle (Figure 7.2); two species of this genus are found in northwestern Europe: brackish-water cockles and saltwater cockles (*C. lamarki* and *edule*, respectively).²¹ This shell-tempered ware, or at any rate the shells, clearly originated in a coastal area, most probably the northern coastal zone. The production of shell-tempered ware may have been restricted to the Frisian coast, especially of Ostfriesland and Schleswig-Holstein. In settlements such as Elisenhof and Emden, almost 100% of the handmade pottery is shell-tempered and probably locally-made.²² At Hesel in Ostfriesland, a pit with wasters of shell-tempered *Kugeltöpfe* was found.²³ Shell-tempered globular pots may have been transported along the coast and even far inland, but shell-tempered fabrics are not always easy to identify. In sandy, acidic soils, the lime dissolves, leaving a surface with small, empty blisters. Moreover, in inland limestone areas, shell-tempered pottery can easily be confused with locally produced pottery tempered with limestone particles. In acidic soil, they both end up as pottery with “*blasiger Oberfläche*”; this was the case, for instance, at Balhorn near Paderborn.²⁴

In the Netherlands, the percentage of shell-tempered ware is nowhere as high as it is in Ostfriesland. At Wijnaldum, the share of shell-tempered ware within the total of early-medieval handmade pottery is 38.2% of the minimum number of individuals, so of the total number of identified specimens from this period. This is much higher than in areas further west, for example at Den Burg-Beatrixlaan on the island of Texel, where around 12.4% was shell-tempered. Further down the west coast, this percentage is even lower, although cockle shells certainly were available there (see Figure 7.33). For example, at Medemblik only 3% is shell-tempered.²⁵ At other settlements in the provinces of Noord- and Zuid-Holland, percentages are slightly higher: at Schagen-Waldervaart 7.4%; at Uitgeest-De Dog 4.2%; at Wijk aan Zee 8.6%; at Limmen-De Krocht 10%; at Leiderdorp-Plantage 9%.²⁶ In the central Netherlands, at Kootwijk, only 0.2% of 4300 fragments are shell-tempered,²⁷ but at Dorestad, nearly half (48%) of the globular pots are shell-tempered.²⁸ In riverside settlements such as Deventer and Zutphen, percentages are variable, up to 17% in some contexts.²⁹ In the northern coastal region east of Wijnaldum, in the settlement of Ezinge, only 17% is shell-tempered,³⁰ which is not only low compared to Wijnaldum, but also compared to the 20% of this fabric in the inland settlement of Midlaren, to which Ezinge was connected by the river Hunze.³¹

The exceptionally high percentage of this fabric at Dorestad may be due to commercial relations, via the river IJssel and Lake Almere (the present IJsselmeer), to the northern coastal area of what now are the Netherlands and Germany. Shell-tempered ware may have been popular merchandise also outside the coastal area. Pots or seashells may have been traded. It is also possible that northern potters opened workshops at Dorestad,³² or that northern merchants and artisans at Dorestad kept using or producing their own kind of pottery. Local preference might be an additional important factor in the distribution of shell-tempered pottery.

7.3 Types

The large ceramic assemblage of Dorestad was varied enough to allow the identification of subtypes. H IA, B and C refer to different rim shapes: round, horizontally flattened, and bevelled, respectively. The Wijnaldum pottery displays these rim shapes not only in type H I, but also in type H III (if the identification based on rim fragments is correct), which has resulted in subtypes IIIA,

²⁵ Besteman 1974, 89; Verhoeven 1998, 31.

²⁶ De Koning 1992; Diederik 1982; Dijkstra *et al.* 2006; Van de Berg 1990; Verhoeven 2016.

²⁷ Verhoeven 1998, 189.

²⁸ Van Es & Verwers 1980, 144; a share of a third for shell-tempered ware at Deventer and Zutphen, mentioned in Nieuwhof 2014, 91, is erroneous; this proportion applies to sand-tempered ware (Verhoeven 2008, 309).

²⁹ Mittendorf 2004.

³⁰ Nieuwhof 2014, 91.

³¹ Verhoeven 2008, 309.

³² A possibility considered feasible also by Van Es and Verwers (1980, 145-146).

¹⁸ Feveille & Jensen 2000, 13.

¹⁹ Steuer 1979, 25.

²⁰ Stilke 2001, 51.

²¹ Prummel *et al.* 2007.

²² Steuer 1979; also Verhoeven 2016, 193.

²³ Bärenfänger 1994, 64; Verhoeven 1998, 31.

²⁴ Bergmann 1989, 39; Bunte 2007, 56.

Table 7.2 Distribution of types within the two main groups MH and CH. The group MCH is omitted because it consists mainly of unclassifiable wall fragments.

Types	Fabrics	n	%	Weight	%
<i>Merovingian Handmade</i>					
H III	h1	144	3.1	2,067	2.8
H III	h1f	74	1.6	1,280	1.7
H III	h1g	41	0.9	870	1.2
H III	h2	2	0.0	58	0.1
H IIIA/H IA	h1, h1f, h1g	25	0.5	326	0.4
H IIIA	h1, h1f	4	0.1	33	0.0
H IIIB	h1, h1f, h1g	21	0.4	314	0.4
H IIIC	h1, h1f, h1g	8	0.2	223	0.3
H IV	h1, h1f, h1g, h2, h3, h4	37	0.8	529	0.7
Total MH		356	7.6	5,700	7.7
<i>Carolingian Handmade</i>					
H I	h1	209	4.4	2,285	3.1
H I	h1f	24	0.5	135	0.2
H I	h1g	24	0.5	471	0.6
H I	h2	301	6.4	3,044	4.1
H I	h2s	26	0.6	110	0.1
H I	h3	33	0.7	238	0.3
H I	h4	5	0.1	46	0.1
H IA	h1	592	12.6	10,104	13.7
H IA	h1f	187	4.0	2,564	3.5
H IA	h1g	114	2.4	2,845	3.9
H IA	h2	356	7.6	7,011	9.5
H IA	h2/4	18	0.4	189	0.3
H IA	h2s	263	5.6	2,276	3.1
H IA	h3	59	1.3	602	0.8
H IA	h4	22	0.5	248	0.3
H IA-long	h1, h1f, h1g, h2s	98	2.1	930	1.3
H IB	h1	211	4.5	3,444	4.7
H IB-long	h1	1	0.0	76	0.1
H IB	h1f	57	1.2	999	1.4
H IB	h1g	24	0.5	711	1.0
H IB	h2	795	16.9	17,427	23.6
H IB	h2s	48	1.0	402	0.5
H IB	h3	417	8.9	3,010	4.1
H IC	h1	246	5.2	3,888	5.3
H IC	h1f	65	1.4	1,110	1.5
H IC-long	h1f	2	0.0	43	0.1
H IC	h1g	39	0.8	1,027	1.4
H IC	h2	13	0.3	539	0.7
H IC	h2/4	3	0.1	115	0.2
H IC	h3	7	0.1	88	0.1
H ID	h1, h1f, h2, h3	14	0.3	232	0.3
H II	h1, h1f, h1g	23	0.5	550	0.7
H II	h2, h2/4	23	0.5	667	0.9
H II	h3	4	0.1	54	0.1
H II/IV	h1, h1f, h2, h2s, h3	24	0.5	525	0.7
H VI	h1	1	0.0	10	0.0
Total CH		4,348	92.4	68,015	92.3
Total MH + CH		4,704	100	73,715	100

B and C. A fourth subtype of H I, H ID, comprises a very small number of sherds (n = 14) that are associated with the final phases of occupation on the Tjitsma dwelling mound in the 10th century AD.

Table 7.2 arranges all fragments that could be classified as a basic type (I-IV), per type of fabric. Out of a total of 32,179 fragments from the early Middle Ages (see Table 7.1), 4,704 fragments were classifiable, 14.6% of the

total number of early-medieval fragments. In weight, the percentage is as high as 34.9%, because larger and heavier fragments can be classified more readily than smaller ones.

Table 7.2 shows the variability in type H III as well as type H I. The latter is the largest group by far, making up around 90.8/89.8% (by number of fragments/weight) of the total amount of early-medieval pottery. H III comes second, with 6.8/7.0%. The remaining 2.4/3.1% consist of

Fig. 7.3 Proportions of fabrics per subtype of globular pot, by number of fragments (left) and by weight (right).

Table 7.3 Overview of number and weight per type and subtype of early-medieval handmade pottery from Wijnaldum.

Main group	Description	% number	% weight
H I	Globular pot	13.2	8.6
H IA	Globular pot	36.3	36.3
H IB	Globular pot	33.0	35.4
H IC	Globular pot	8.0	9.2
H ID	Globular pot	0.3	0.3
Total H I		90.8	89.8
H II + H II/IV (Carolingian)	Neckless bowl or skillet	1.6	2.4
H III + H IIIA/H IA	Ovoid pot	6.8	7.0
H IV (Merovingian)	Neckless bowl	0.8	0.7
Total		100	100

bowls and skillets. The large variation among the ovoid and globular pots that shows from Table 7.2 illustrates the difficulty in classifying early-medieval handmade pottery. The four main types as shown in Table 7.3 are a simplification when we consider the actual sherds. The drawings (Figures 7.4-7 and 7.11-21) show the variability within types. These variations in shape can be captured more fully with Steuer’s coding system.

Some very common type/fabric combinations may indicate an important phase in the production of handmade pottery: that of professionalization, after a very long period of domestic production of such pottery for a household’s own use (see also section 7.6). This seems to be the case with the shell-tempered globular pot of type H IB, which is represented by nearly 800 fragments, weighing over 17 kg (Figure 7.3). These fragments have highly similar rim shapes and fabrics (Figure 7.1). The number of fragments of subtype H IC in this fabric is considerably lower. The other subtype in this fabric, H IA, is also represented by a large number, 356 fragments, weighing 7 kg. Among the shell-tempered sherds, a distinction was made between the “usual” fabric and a variety that seems softer and more irregular: h2s. This might be a local variety of this ware, while the regular h2 fabric, especially if combined with the seemingly standardized type H IB, might partly or

entirely be imported from the coastal area of Ostfriesland. The typology of globular pots compiled by Haarnagel for Emden, where 100% of the globular ware of the 9th century was shell-tempered, shows the same variants as do its H IB-h2 counterparts at Wijnaldum (see section 7.3).³³

In the following sections, the types and subtypes of early-medieval handmade pottery that were found at Wijnaldum will be further discussed.

Group H III: ovoid pot

Ovoid pots make up 6.8% and 7.0%, respectively, of the total number and weight of sherds (Table 7.3). There is more variation in fabric and rim shape than at Dorestad; therefore subtypes H III A, B and C were added, analogous to the A, B and C subtypes of type H I.

Type H III cannot be distinguished from ‘Hessens-Schortens’ pottery (Chapter 4, type A4). These designations both refer to the same kind of handmade, grit-tempered Merovingian-period pottery. A distinction that was defined by Taayke in Chapter 4 is the shape of the base; A4 pots have a more or less flat base, while ovoid pots have not globular, but lenticular or sagging, ‘wobbly’ bases (*Wackelboden*). However, although wobbly bases certainly were a stage in the development towards globular pots, they did already occur in the Migration Period, even in type A1, as Taayke’s description of that type shows. Nevertheless, the more rounded bases are probably closer in time to globular pots.³⁴ The overlap between types A4 (which is included in Chapter 4 to show the stylistic development) and H III (this chapter) hardly affects the percentages and ratios presented here, since the A4 group comprises only seven specimens.

The ovoid pots can be distinguished from other, previous and contemporaneous types that are more or less similar in shape: the undecorated pottery of the Migration period (Chapter 4, type A1), and the Merovingian-period ‘Tritsum’ ware (type A3). Undecorated Anglo-Saxon-style

33 In Verhoeven 1998, 36, fig. 7.
34 This is also the outcome of Bayesian modelling of the available radiocarbon results (Krol *et al.* 2020). Round bases occur from around AD 650.

Fig. 7.4 Type H III, main group with short, neckless rims, belonging to the Hessens-Schortens group. Scale 1 : 4. Drawings J. de Koning.

or A1 pots often have quite similar shapes (though usually with flatter and broader bases) and fabrics with grit temper, but there is a considerable difference in the treatment of the surface. Although there are exceptions, the surface of H III pots is usually quite rough, with grit particles often protruding through the surface; whereas the surface of Anglo-Saxon-style pots of type A1 is smooth and well-finished. There is also a difference in colour. Anglo-Saxon-style pots often are black or reddish, while H III pots tend to be greyish or brownish. Multi-coloured pots are quite common, as a result of the production process and their use as cooking pots.

The Tritsum-type or A3 pots, which are common at Wijnaldum (see Chapter 4), are very similar in shape but differ in fabric: they have vegetal tempering, while Hessens-Schortens-style pottery and the ovoid H III pots are grit-tempered. Tritsum ware also dates from early in the Merovingian period.

The fabrics of H III pots are similar to those of globular pots (H I). With many rim fragments, the difference between ovoid and globular body shape is hard to establish. Classifying these pots under different headings is an etic approach, the view of the researcher; we do not know how the potters would classify their products. Sometime during the 7th century, potters seem to have started making slightly different pots than previously, by making the rims longer and more everted, and making the pots more globular. Were they inspired by the globular pots (see Chapter 5, type CW III) from the Frankish Rhineland or was this an indigenous development? The rise of the handmade globular pot as the most popular cooking pot in the 8th century is quite remarkable, in the first place because it largely replaced wheel-thrown ware, and secondly because globular pots continued to be produced for the next 600 years. It was not until the 13th and 14th centuries that they were finally replaced by red-glazed or grey tripod crocks, which

Fig. 7.5 Subtype H IIIA/H IA, with rounded rims. Scale 1 : 4. Drawings J. de Koning.

Fig. 7.6 Subtype H IIIB, with flattened rims. Scale 1 : 4. Drawings J. de Koning.

Fig. 7.7 Subtype H IIIC, with beveled rims. Scale 1 : 4. Drawings J. de Koning.

Fig. 7.8 Restored, archaeologically complete H III pot with a lenticular base. Find number 7377 (id. 720) (NAD Nuis F 2009-II-4). Scale 1:4. Photo J. de Koning.

could stand on their feet. The ovoid pot may be considered a stage in the development of the globular pot.³⁵

Type H III is variable. Broad subtypes bring some order into the variation. The main group has very short, vertical or slightly everted rims, which smoothly curve into the ovoid body (Figure 7.4). The rims have different shapes. Most fragments are grit-tempered; only two sherds are shell-tempered (Figure 7.4, no. 1948). This main category of H III is closely related to, or even belongs to Hessens-Schortens ware, type A4 in Taayke's typology (Chapter 4).

Groups H IIIA, B and C have rounded, horizontally flattened or bevelled rims, respectively (Figures 7.5-7). The rims are longer than in the main group and curved outward, like the rims of globular ware. These subtypes can be considered proto-globular pots. Some of the rims that were classified as H IIIA, B or C might actually belong to globular pots.

Chronology

The ovoid pots at Wijnaldum were found in association with different kinds of pottery. A total of 120 find numbers, coming from terp layers or features such as pits, wells, or ditches, include ovoid pots. Thirty of these assemblages consisted of just one fragment. The ninety remaining assemblages contain different kinds of pottery. Part of this pottery had been dug up from older layers disturbed in the past. Reliable associations of ovoid pots are with Carolingian pottery, globular ware as well as imported Rhenish ware. In twelve reliable contexts, ovoid pots were associated with Merovingian wheel-thrown (MW) or older pottery. Twenty find numbers with type H III fragments also contain shell-tempered pottery (h2), which go back no earlier than the middle of the 8th century.

The introduction of ovoid pottery can be dated on the basis of the association of the main H III/Hessens-Schortens group with Merovingian wheel-thrown ware, and of dated contexts. The earliest context dates are from the 6th century, which is in line with the date of A4 ware (see Chapter 4).³⁶ One almost complete pot, that is reminiscent in shape and surface treatment of type A1 but has a distinctly wobbly base, was classified in this group (Figure 7.8).

As to the end date, the various associations show that ovoid pots were in use alongside Carolingian pottery and handmade globular pots, as well as imported wheel-thrown wares, at least into the 8th century. For Den Burg-Beatrixlaan, it was assumed that type-H III pots coexisted with H I pots throughout the 8th century, given the associations of large (*in situ*) fragments of H III-type pottery with fragments of globular pots.³⁷ This also seems to apply to Wijnaldum. The H III subtypes with flattened and bevelled rims, IIIB and IIIC, are very similar to H IB and IC. These must belong to the final phase of H III, dating to the 8th or perhaps early 9th century. In Germany, ovoid pots were in use into the 8th and 9th centuries; the end of the

³⁵ Stilke 2001, 80; Van Es & Verwers 1980, 122.

³⁶ Dates between 575 and 625 (Contexts/features nos. 527, 608, 625, 637), between 500 and 600 (feature no. 1856), between 500 and 550 (feature no. 185), between 550 and 650 (feature nos. 975, 1717), between 550 and 600 (feature no. 1233).

³⁷ De Koning in prep.

Fig. 7.9 Neckless bowls of group H IV or skillets of type H II. Scale 1 : 4. Drawings J. de Koning.

Fig. 7.10 Skillet handles, type H II. Scale 1 : 4. Photo J. de Koning.

use of ovoid pots (*weiche Grauware*) here is dated to the 9th century.³⁸ In the Netherlands, however, the replacement of ovoid by globular ware seems to have taken place

earlier, at least in the western and northern Netherlands. Here it seems no longer to occur after 800.³⁹ Radiocarbon datings of this type from the North Sea area also point to an end date of around 800, with a small number of calibrated date ranges into the 9th century.⁴⁰ Ovoid pots seem to occur in 9th-century contexts only in the eastern IJssel area, in places such as Deventer and Zutphen.⁴¹

Groups H II and IV: skillets and neckless bowls

Neckless bowls of type IV fall into two groups. First, there are simple bowls that are similar to the types S2 and S3 as defined by Taayke (see Chapter 4). These are hard to date because such bowls were in use for many centuries. In addition to the twelve fragments of type S2 and 25 fragments of type S3 that were discussed in Chapter 4, 37 fragments were identified as belonging to neckless bowls.

Secondly, there is a group of sherds that might belong to bowls or skillets of the Carolingian period. At least 74 fragments belong to neckless bowls of Carolingian type H IV or to skillets, type H II, that is 1.6% and 2.4%, respectively, of the total number of fragments and total weight of early-medieval handmade pottery (Table 7.3; Figure 7.9). For most of these fragments, it was impossible to distinguish between type H IV and type II. Fabrics and rim shape are similar; the two types are only distinguishable

³⁹ Verhoeven 1998, 251.

⁴⁰ Krol *et al.* 2020.

⁴¹ Sanke 1999, 266-267, table 3, nos 3, 6; table 4, nos 1-6.

³⁸ Haarnagel 1959; Siegmüller 2010, 104; Verhoeven 1998, 25.

Fig. 7.11 Globular pots with rounded rims, in fabrics h1 and h2 and h2/4. Scale 1 : 4. Drawings J. de Koning.

by the handles of skillets (Figure 7.10). Most of the Wijnaldum fragments have quite vertical rims, while the Dorestad rim fragments of type H IV are slightly curved inwards, like type S3 as defined by Taayke.⁴² Which suggests that the fragments found at Wijnaldum generally belong to skillets (type II), which usually have more vertical or everted walls, as at Dorestad.

Chronology

The simple bowl fragments are hard to date, but most probably belong to the Merovingian period. Taayke dates his types

S2 and S3 to the Migration Period, but does not exclude the possibility of a longer period of use (see Chapter 4).

Given their distribution among the harbour jetties at the Hoogstraat I site at Dorestad, bowls are relatively early, while skillets are later. This tallies with the Merovingian date of S2/S3 bowls. Context evidence at Wijnaldum shows, without exception, that the fragments of bowls or skillets come from contexts that can be dated between approximately 750 and 850.

Type H I: globular pots

By far the largest group consists of globular pots of type H I, as is clear from Table 7.3. In terms of number of fragments, type H I, including its subtypes, is represented by

⁴² Van Es & Verwers 1980, 121.

Fig. 7.12 Globular pots with rounded rims, subtype H IA-variant 1, in fabrics h1 and h2. Scale 1 : 4. Drawings J. de Koning.

90.8% of all early-medieval handmade pottery, 89.8% in terms of weight.

The main subtypes are H IA, H IB and H IC, following Van Es and Verwers.⁴³ Type H IA has a plain, rounded rim, which succeeds the most common form of type H III (see Figures 7.5 and 7.11). H IB has a horizontally flattened rim. Its edge is rounded or vertically flattened. H IC also has a flattened or even slightly hollow rim, but in a more oblique position than the flattened rim of H IB, and its edges are sharper. The earliest type-H I pots appear at the beginning of the 8th century.⁴⁴

Within the subtypes of type H I, several variants could be distinguished. Although the significance of these variants is not always clear, they were recorded for future reference. They may provide evidence of contacts and exchange or of local production, when compared with ceramic assemblages elsewhere.

Subtype H IA

Within the total body of (early-medieval) handmade pottery, type H IA is represented by 1709 fragments, weighing 26.8 kg (36.3% both in number and weight) (Table 7.3).

The proportions of fabrics within subtype H IA, in number and weight, are represented in Figure 7.3. Most common is type H IA with grit temper (h1), which makes up 18.4 and 20.3% of the total number and weight of early-medieval sherds, including the coarse and fine grit-tempered variants (Table 7.2). The share of shell-tempered H IA pottery is 13.6 and 12.9% respectively, including all shell-tempered varieties (h2, 2/4, 2s). A considerable part, 41% of the fragments in this fabric (5.6 and 3.1% respectively) were interpreted as a (probably) local variety (fabric h2s). A third distinctive group consists of comparable fragments with a sand-tempered fabric (h3), 1.3 and 0.8% in number and weight, very low percentages compared to the share of this fabric in H IB (8.9 and 4.1%; Table 7.2). A fourth and rare fabric in type H IA is tempered with grog (0.5 and 0.3%).

Some rims of the variants of type H I (IA, also subtypes IB and IC), in grit-tempered as well as shell-tempered fabrics, are relatively long (Table 7.2: H IA, B and C-long). This might be a younger development. In Steuer's system (see section 7.5), these longer rims fall outside the cluster of variants that are most common at Wijnaldum (Figure 7.30).

⁴³ Van Es & Verwers 1980.

⁴⁴ Verhoeven 1998, 251.

H IA-h1 variant 2

H IA-h2 variant 2

Fig. 7.13 Globular pots with rounded rims, subtype H IA-variant 2, in fabrics h1 and h2. Scale 1 : 4. Drawings J. de Koning.

Within types H IA-h1 and H IA-h2, at least six subgroups can be distinguished, based on specific characteristics of the shape of the rim and neck or shoulder (Figures 7.12-15).

- Variant 1: a thickened rim, with a smooth, S-shaped transition from shoulder to rim.
- Variant 2: as variant 1, but the rim is not thickened.
- Variant 3: as variant 2, with pointed rim.
- Variant 4: body and rim form an angle of approximately 45 degrees.
- Variant 5: roughly similar to variant 4, but the neck is concave, and in some cases grooved.
- Variant 6: Some fragments are exceptionally thick-walled and in some cases quite large.

We assume that most pots in fabric h1 were produced locally. This implies that the similar variants within the two fabric groups, h1 and h2, can be taken as an indication of local production of the shell-tempered ware as well (see section 7.5).

The comparatively thin-walled, sand-tempered type H IA-h3 shows less variation. It is, however, represented by a much smaller number of fragments. H IA-h3 is similar in many ways to type H IB-h3, except for the shape of the rim.

H IA-h1 variant 3 **H IA-h1 variant 4** **H IA-h2 variant 4** **H IA-h1 variant 5** **H IA-h2 variant 5**

Fig. 7.14 Globular pots with rounded rims, subtype H IA-variants 3, 4 and 5, in fabrics h1 and h2. Scale 1 : 4. Drawings J. de Koning.

Subtypes H IB and H IC

There probably is a chronological difference between H IA on the one hand, which is the direct successor of the earlier type H III, and subtypes H IB and H IC on the other, which represent later developments. These rim shapes are also found in type H III and probably belong to the

final period of H III. The difference in shape between the horizontally and obliquely flattened rims of subtypes H IB and H IC might seem quite irrelevant, especially since it is often hard to tell why a rim fragment was identified as either H IB or C (or even H IA). At Dorestad-Hoogstraat, the same problem occurred, as can be inferred from the

Fig. 7.15 Coarse globular pots with rounded rims, subtype H IA-variant 6, in fabrics h1 and h2. Scale 1 : 4. Drawings J. de Koning.

illustrated fragments.⁴⁵ Nevertheless, a chronological difference between H IB and H IC was distinguished, H IB starting in the second half of the 8th century, and H IC in the 9th century. Specific fabrics seem to be preferred for these types: H IB is more often shell-tempered, whereas H IC is mostly grit-tempered.

At Wijnaldum, 41% (by number of rims) and 44.6% (by their weight) of early-medieval handmade pottery belongs to globular pots with flattened rims (see Table 7.2). H IB is much more common than H IC, 33.0 and 35.4% versus 8.0 and 9.2% in number and weight. Here too, H IB fabrics vessels often are shell-tempered, and H IC mostly grit-tempered (Figures 7.3 and 7.20). Only eight shell-tempered pots were identified as subtype H IC (Figure 7.21). The large amount of type H IB-h2 compared to type H IB-h1 is remarkable if we compare it with type H IA, with more than 50% of grit-tempered pots. The difference can be explained by the earlier occurrence of subtype H IA, well before the introduction of shell-tempered globular

ware. The preference for grit temper in type H IC, however, is remarkable, especially because the type arose in the heyday of shell-tempered pottery, the 9th century.

With nearly 800 rim fragments, subtype H IB-h2 is the most common, making up 16.9% of the early-medieval handmade pottery or indeed 23.6% based on weight (17.4 kg). These pots are significantly larger than their grit-tempered counterparts (see section 7.4). The second largest group is H IB-h3; the 417 rim fragments of this subtype in fabric h3 make up 8.9% of the total number of fragments, but weigh only 3 kg (4.1%). The difference in fineness between fabrics h2 and h3 is clearly evident from the diagrams that represent the proportions of fabrics per subtype, by number and weight (Figure 7.3). The sand-tempered fabric h3 seems to be almost exclusively used for this subtype, with only a few specimens in subtype H IA (1.3%) and H IC (0.2%). A specific function may be the reason for producing this smaller, thin-walled, sand-tempered variety (Figure 7.22). Within the grit-tempered groups of H IB as well as H IC, a variant was distinguished with extended, longer rims, similar to the long rims observed in subtype H IA.

⁴⁵ Van Es & Verwers 1980, figs. 64-66.

H IB-h1

Fig. 7.16 Globular pots with flattened, more or less horizontal rims, subtype H IB, in fabric h1. Scale 1 : 4. Drawings J. de Koning.

Variation in type H IB-h1 and -h2

The variants within types H IA-h1 and h2 are highly similar, as was mentioned above. All variants occur in both fabrics. Such is not the case with the fabrics of subtype H IB. The variants in fabric h2 cannot be identified as clearly among the h1 fragments of type H IB, although similar shapes do occur (compare Figure 7.16 with Figures 7.17-19). Type H IB-h2 is the largest and most uniform group among the globular pots. Within H IB-h2, three variants can be distinguished; these anticipate the often intricate rim shapes of late-medieval globular pots:

1. Homogeneous group of globular pots with a neck and a clear transition from neck to shoulder. The rim is basically triangular in section and flattened horizontally. Most pots are fairly tall (Figure 7.17).
2. Globular pots with non-thickened but flattened rims. The transition from body to rim is more flowing than in the previous group. A neck is lacking (Figure 7.18). There is much variation in size.
3. Globular pots with faceted rims that are flattened twice: on top (horizontally) and on the outside (Figure 7.19).

7.4 Further analysis

The sizes of globular pots

Sizes are interesting because patterns in a representative sample may reveal preferences for specific sizes within settlements, while similarities in such patterns between settlements may point to standardization and hence to professional production. This is relevant also for Wijnaldum.

Measurements can be made at different places on a pot: the outer or inner rim diameter, or the mouth opening. Inner rim diameters slightly differ from mouth openings: they are measured at the top of the rim, while the mouth opening is measured at the narrowest point. The difference may amount to 1-3 cm. Globular pots may be relatively wide- or narrow-mouthed, so these diameters are not only related to pot size. Nevertheless, they seem to be a fair indicator of the size of a pot.⁴⁶

The inner and outer rim diameters of 707 rim fragments from Wijnaldum could be measured. Verhoeven compared the inner rim diameters (Figure 7.23) with the diameters of mouth openings of globular pots within and

⁴⁶ Verhoeven 1998, 256-257.

H IB-h2 variant 1

Fig. 7.17 Globular pots with flattened, more or less horizontal rims in fabric h2, subtype H IB-variant 1. Scale 1 : 4. Drawings J. de Koning.

between settlements.⁴⁷ The average of the mouth openings of the total sample studied by Verhoeven ($n = 3144$) is 14 cm, which is comparable to the 16-cm average inner rim diameter of the Wijnaldum globular pots (Figure 7.24).⁴⁸

In the distribution of mouth-opening diameters of globular pots from Leiderdorp-De Plantage recorded by Verhoeven, fabrics seem to matter. Most grit-tempered pots here are found in the range between 9 and 15 cm, while the shell-tempered pots usually have mouth openings larger than 16 cm.⁴⁹ This is an interesting reference point for the pottery from Wijnaldum.

More than half of the measured globular pots from Wijnaldum are grit-tempered (h1: 53.5%). At least 37.1% are shell-tempered (h2). The remaining 9.4% are tempered with sand (h3). The distribution according to fabrics clearly shows different patterns for each fabric (Figures 7.24 and 25). The sand-tempered pots, represented by rim fragments of 73 vessels, are the smallest, with inner rim diameters mostly between 10 and 15 cm and an average diameter of 12.3 cm (Figure 7.24). Shell-tempered pots and sherds generally make the most robust impression, suggesting that they are also the largest pots. The shell-tempered pots, represented by fragments of 233 vessels, show a fairly even distribution between 13 and 24 cm, with a small peak at 15 cm, and an average diameter of 17.3 cm (Figure 7.25). Grit-tempered pots, represented by 401 rim fragments, have slightly smaller inner rim diameters, averaging 15.8

⁴⁷ Verhoeven 1998, 256-259; 2016, 196-197.

⁴⁸ Verhoeven 1998, fig. 110.

⁴⁹ Verhoeven 2016, fig.9.23.

H IB-h2 variant 2

Fig. 7.18 Globular pots with flattened, more or less horizontal rims in fabric h2, subtype H IB-variant 2. Scale 1 : 4. Drawings J. de Koning.

H IB-h2 variant 3

Fig. 7.19 Globular pots with faceted rims in fabric h2, subtype H IB-variant 3. Scale 1 : 4. Drawings J. de Koning.

Fig. 7.20 Globular pots with obliquely flattened rims, subtype H IC, in fabric h1. Scale 1 : 4. Drawings J. de Koning.

cm, and inner rim diameters mostly between 11 and 21 cm. The distribution of diameters is less even than that of shell-tempered ware and has some conspicuous peaks and dips. At 15 cm, the graph of grit-tempered ware shows a dip, while the graph of shell-tempered ware shows a peak here. Was shell-tempered ware preferred for this size? The graph for grit-tempered pottery shows peaks at 13-14, 16-17 and 20 cm, as if these sizes were preferred in grit-tempered ware. Verhoeven also found such peaks in the diameters of mouth openings of globular pots from Leiderdorp-De Plantage, but to a different pattern, also if we take into account the difference in diameter between inner rim and

mouth opening: 10, 12, 14, 16 and 18 cm. The diameters of mouth openings of shell-tempered pots, which were much less common at Leiderdorp than at Wijnaldum ($n = 24$), peak at 16 cm. There seem to have been preferences for specific pots sizes in both settlements, but the reasons for these differences are unclear.⁵⁰

To further investigate the differences between fabrics, different types must be taken into account. The Wijnaldum assemblage is large enough to allow differentiation by

⁵⁰ Verhoeven 2016, 197.

H IC-h2

Fig. 7.21 Globular pots with obliquely flattened rims, subtype H IC, in fabric h2. Scale 1 : 4. Drawings J. de Koning.

Fig. 7.22 Complete globular pot of type H IB-h3, with an inner rim diameter of 9 cm, *in situ* during the excavation. Find number 3387. Photo ©University of Groningen, Groningen Institute of Archaeology.

type. For the analysis, only the main types with sufficient numbers of measurable fragments were selected ($n = 628$) (Table 7.4 and Figure 7.26). In Figure 7.26, all type-fabric combinations show a different kind of distribution. The data can be considered by type (H IA, B or C) and by fabric (h1, 2 or 3). The majority of type-H IA pots have inner rim

diameters between 12 and 19 cm; H IB, between 9 and 22 cm (without H IB-h3: between 14 and 22 cm); and type H IC, between 13 and 20 cm. Type H IA thus is slightly smaller than H IB-h1/2 and H IC; H IB and IC are distributed differently, but do not differ much in size. Type H IB-h3 is the smallest, with most diameters between 9 and 14 cm. This type completely coincides with fabric h3 in the analysis of diameters per fabric (Figure 7.25).

Apart from type H IB-h3, all types in Figure 7.26 have multiple peaks and dips, which reflect the peaks and dips in the distribution per fabric (Figure 7.25). The most common type, H IA-h1 ($n = 183$), has two peaks, at 12/13 and 17/18 cm, with a dip at 15-16 cm. H IA-h2 has its peaks at 15 and 19 cm, with a dip at 17-18 cm. The two fabrics in this type thus seem to be complementary; specific fabrics seem to be associated with specific sizes. Type H IB-h1 has a high peak at 16 cm and a smaller one at 22 cm, whereas type H IB-h2 is fairly evenly distributed. Relative narrow- or wide-mouthedness may play a role. The peaks in H IA and H IB-h1 might reflect relatively narrow-mouthed and wide-mouthed specimens. Type H IC-h1 peaks at 17 and 20 cm, with a considerable dip at 19 cm, exactly where H IA has a complementary peak. All these - partly complementary - peaks and dips may represent real preferences for specific types with specific fabrics in specific sizes. However, the chronology should not be ignored. In the 200 years between AD 700 and 900, preferences for

Fig. 7.23 Distribution of rim diameters of globular pots from Wijnaldum, all types and fabrics.

Fig. 7.24 Range and mean of inner rim diameters of globular pots from Wijnaldum, per fabric type (n = 707).

specific sizes may have changed. There seems to be a trend towards bigger crockery. This can be inferred from the larger diameters of shell-tempered pots, most of which will date from the 9th century. Very large globular pots, with inner rim diameters of 22 cm or more, also belong to the later types H IA-h2, H IB-h2 and H IC-h1. Since we cannot date all globular pots to either the 8th or the 9th century, the role of changing preferences for specific sizes cannot be assessed more precisely.

Decoration of H III and H I pots

Only a small percentage of the pots of this period are decorated, burnished or provided with additional features, such as handles and secondary holes. Many of the decorated wall fragments cannot be attributed to a specific type and are classified only by their fabrics, which point to type H III or, more often, type H I.

Stamped decoration

Hardly any decorated fragments belong to the ovoid pots of type H III, with the exception of four fragments with

stamps, all with a wafer pattern. Two of these stamps are triangular and two are round (Figures 7.4-5 and 7.27). One small fragment, possibly of this type, is decorated overall with some kind of comb (Figure 7.27, 3955).

Stamps are also the most common decoration on globular pots, type H I. The most common decorative motif, occurring on five H IA-h1 and two H IA-h2 pots, consists of individual stamps, triangular, round and sometimes square. A few of these pots show a horizontal pattern of stamps (Figures 7.13 and 7.27; 4860: rectangular stamps with wafer pattern; 7506 and 4608: round stamps with wafer pattern; 936, 10131.b, 10608 and 1256 triangular stamps with wafer pattern). In many cases, only small fragments were found with one or a few stamps. Most of the stamps have a wafer pattern or a pattern with a grid dividing the area of the stamp into small squares, but some stamps are different. A rosette pattern is also known from relief-band amphoras (Figure 7.27, 10333.b).⁵¹

⁵¹ Van Es & Verwers 1980, 66.

Fig. 7.25 Distribution of inner rim diameters for each fabric, in numbers of pots. h1: grit-tempered; h2: shell-tempered; h3: sand-tempered.

Fig. 7.26 Distribution of inner rim diameters for each type, as a percentage of the total number of measured pots per type.

Table 7.4 Inner rim diameters per type. Diameters in cm.

Type\ Diameter	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Total number of pots
H IA-h1			3	3	8	7	20	22	18	13	14	22	21	12	10	7	1	1				1	183
H IA-h2			3	1	1	1	1	7	6	12	8	4	5	10	4		1	2	3	3	1		73
H IB-h1	1		1	2	2	5	6	5	8	7	16	5	7	4	5	3	7	3				1	88
H IB-h2			1		3	3	7	9	13	15	14	15	17	10	12	12	13	6	9			1	160
H IB-h3		1	2	5	6	11	9	9	8	2	2	1	3										59
H IC-h1		1		1		3	2	6	7	7	7	9	5	1	10	2	1		1	1	1		65

Some of the round stamps are divided by a cross into four quarters (Figure 7.27, 6053; 6093.a). Another round stamp has an intricate pattern with four squares in the centre, surrounded by rectangles (no. 11703).

Fingertip impressions

A few sherds have fingertip impressions (*dellen*) on the shoulder. In most cases, it is just a single impression (Figure 7.21, 6906.b; Figure 7.16, 10672/2170), but sometimes pairs of impressions occur (Figure 7.5, 1526.b). One

Fig. 7.27 Decorated fragments of types H I and H III. Scale 1 : 4. Drawings J. de Koning.

pot is decorated with a horizontal row of fingertip impressions (Figure 7.5, 1001.c). An abstract decoration made by fingers pressed into the clay was found on the shoulder of three shell-tempered fragments of type H IB (Figure 7.17, 7712; Figure 7.18, 5455; Figure 7.19, 5623). A 5.5 cm long fingertip groove was found on a shell-tempered pot of group H IA (Figure 7.15, 3365). Whether these impressions conveyed any meaning is unknown.

Imitation Badorf ware

One small globular pot has a horizontal pattern of two bands marked with incised lines and a row of triangular spatula impressions in between (Figure 7.27, 1098). Another fragment shows a similar design of grooves and spatula impressions (Figure 7.27, 7057). This decorative motif is also known from other settlements in the terp region. A complete pot decorated with horizontal rows of

stamps and at least four bands with the same kind of triangular spatula imprints comes from the terp Burmania I near Ferwerd.⁵² At Dorestad-Veilingterrein, several fragments with comparable decorations were found.⁵³ It was suggested by Boeles and more recently by Both that this kind of decoration imitates Badorf ware.⁵⁴ Both also draw attention to the square impressions imitating the rouletted designs that are so typical of Badorf ware. Van Es and Verwers show some similar examples in their miscellaneous group H VI.⁵⁵ The rouletted Badorf decorations, how-

⁵² Boeles 1951, plate LIII, no. 1.

⁵³ De Koning 2012, 203.

⁵⁴ Boeles 1951, plate LIII, no. 4, from the terp of Oostrum; Both 1999, 199-200.

⁵⁵ Van Es & Verwers 1980, 122. Fig. 70 nos. 1-3.

H III

H I

Fig. 7.28 Handles and perforations on types H I and H III. Drawings J. de Koning.

ever, make quite a different impression than the triangular spatula imprints on the Wijnaldum fragments.

Handles and holes

Handles are extremely rare within group H III as well as H I, but they do occur, more often on ovoid pots than on globular ones (Figure 7.28). Handles on ovoid pots may be either perforated disks or simple looped clay rolls, placed vertically on the shoulder. The rare handles of globular pots are placed higher on the pot, connecting the shoulder to the rim.

Several pots have small holes in the neck (Figure 7.20, 4656.c; Figure 7.28, 6909). Most of these perforations were made after firing. This is very clear on a pot with a single stamp decoration, where the hole was drilled partly through the stamp impression (Figure 7.5, 1289.a). The holes were probably made in order to suspend the pot over the fire; this requires two holes on opposite sides, through which a cord could be strung.

To protect cords against the fire, protective flanges or bar lips were sometimes applied on early-medieval handmade pottery. They are known from terp settlements such as Ezinge in the province of Groningen, and inland settlements such as Midlaren in northern Drenthe.⁵⁶ Only one comparable device is known from Wijnaldum, no. 5924a (see Chapter 4, Figure 4.11).

7.5 Steuer-ing the pots

Classification with the aid of a typology is a partly subjective process, and the distinctions made by archaeologists do not necessarily correspond to those made by the original producers or users. A more objective system was designed by Steuer.⁵⁷ His coding system combines several different variables. To describe rim sherds, four variables are combined into a four-digit code (Figure 7.29). These four variables are:

- shape of the rim (six different shapes)
- angle of the rim (five options)
- transition from rim to body (four options)
- length of the rim (three lengths)

Verhoeven notes that, although 360 different combinations are theoretically possible, in reality some of them are impossible; which leaves 260 potential combinations.⁵⁸ A disadvantage of this system is that the variation within this kind of pottery is too great even for this kind of classification, especially with complex rim shapes like those of the 12th and 13th centuries. Additions like grooves or lid supports are not covered by the system. Therefore, Verhoeven added variables for lid supports and grooves (Figure 7.29).⁵⁹ Another objection to this classification could, in theory, be the enormous range of variation and therefore of codes.

⁵⁶ Nieuwhof 2008; 2014, with dates from the 6th century onwards; see also Verhoeven 1998, 56–57.

⁵⁷ Steuer 1971.

⁵⁸ Verhoeven 1998, 12.

⁵⁹ Verhoeven 1998, 13–14, fig. 2; also 2008, 310.

Fig. 7.29 The coding system for early-medieval handmade pottery by Steuer (1971;1973), with two variables (lid support and details) added by Verhoeven (2008).

In practice, most of the sherds in an assemblage can be described with just a small number of codes.

To test its usability and to compare it with the Dorestad typology, 1245 rim fragments from Wijnaldum of globular and ovoid pots, bowls and skillets (types H I, H II, H III and H IV) were classified according to this coding system. 'Steuer-ing' the Wijnaldum pots results in a limited number of 87 combinations (Figure 7.30); most of these fall within a cluster roughly between 1313 in the upper left-hand corner and 5422 in the lower right-hand corner. Of these 87 combinations, 68 combinations occur

less than ten times, and of these, 35 appear only once.

Within the cluster, 1122 rims are represented, 90.1% of the total group ($n = 1245$). An even denser and smaller group is found in this cluster between 1313 in the upper left-hand corner and 1412 in the lower right-hand corner, including 1050 (84.3%) of the 1245 rims represented in this table.

The smallest relevant cluster is found in one row, between 1313 and 1413; it is characterized by medium-sized, slightly everted rims with a flowing transition to the body (combination -313). This row includes the two most common combinations: 1313, which occurs 422 times, 33.9%

Fig. 7.30 Table combining four variables, according to the coding system by Steuer (1971); horizontal: shape and position; vertical: transition from rim to body and length of the rim (after Steuer 1971). Shapes that occur in the Wijncaldum assemblage are emphasized: blue = appearing less than ten times; red = more than ten times. Within the thick red line are the main types, occurring 422 times (1313) and 237 times (5313). Only H III and H I pots are included in this scheme. Drawing J. de Koning.

Fig. 7.31 The most common “Steuer variables” in the pottery assemblage of Warendorf (n=2192; Röber 1990). There is only a small overlap with Wijncaldum-Tjitsma (fig. 7.30). Drawing J. de Koning.

of the total group; and combination 5313, occurring 237 times, 19.0%. The total number of rim fragments in this small cluster of just five combinations is 881, or 70.8% of the total group.

The clustering of codes shows that the early-medieval handmade pottery of Wijncaldum was fairly uniform. Although code 1313 occurs in nine different Dorestad type-fabric combinations and 5313 in seven of these, there is a clear correlation of 1313 with type H IA, and of 5313 with type H IB (Table 7.5). The cluster within the red line in Figure 7.30 represents most of group H I. The combinations with longer rims to the right of this cluster probably belong to late-Carolingian globular pots. Most

of the ovoid pots of group H III are found to the left of the cluster, especially code 1213, which occurs 23 times.

There are some important studies in which handmade pottery was classified according to the Steuer system, for example Röber’s study of the handmade pottery of the early-medieval settlement of Warendorf in Nordrhein-Westfalen (Germany), a settlement that was inhabited between around AD 675 and 850.⁶⁰ Based on Steuer’s classification, Röber distinguished fifteen types, five of which are represented by 7% or more of the fragments

60 Röber 1990.

Table 7.5 Table combining the “Steuer-codes” with the Dorestad classification.

code	aantal	H-III	HIA-h1	HIA-h2	HIA-h3	HIA-h4	HIB-h1	HIB-h2	HIB-h3	HIC-h1	HIC-h2	HIC-h3	H-II	H-II/IV	H-IV	%
1113	1	1														0.1
1131	2	1		1												0.2
1211	1	1														0.1
1212	1		1													0.1
1213	23	11	9	3												1.8
1223	2		2													0.2
1233	1	1														0.1
1311	2	1	1													0.2
1312	10		5	3			1	1								0.8
1313	422	32	254	109	3	4	8	9	2			1				33.9
1321	1	1														0.1
1322	2	1		1												0.2
1323	11	4	4	3												0.9
124	2														2	0.2
1332	3		3													0.2
1333	1			1												0.1
134	7													5	2	0.6
1412	9		2	7												0.7
1413	33		25	8												2.7
1423	5		3	2												0.4
1433	5		4	1												0.4
1512	1		1													0.1
1533	1		1													0.1
2213	2					2										0.2
2233	1	1														0.1
2312	6	1	4	1												0.5
2313	39	2	25	7	1	1	1	2								3.1
2322	1		1													0.1
2323	2		2													0.2
2332	2		2													0.2
234	1													1		0.1
2412	2	1	1													0.2
2413	3	3														0.2
2422	1		1													0.1
2523	1		1													0.1
3113	1			1												0.1
3132	1		1													0.1
314	1														1	0.1
3141	1	1														0.1
3213	1		1													0.1
3231	1	1														0.1
324	5												1	1	3	0.4
3312	10	1	5	1		1	1								1	0.8
3313	41	12	21	4	1		2	1								3.3
3322	1		1													0.1
3333	2		2													0.2
334	3													2	1	0.1
3413	6	1	3	1				1								0.5
3422	1		1													0.1
3423	2		1				1									0.2
4113	1		1													0.1
4213	3		1				1			1						0.2
424	1												1			0.1
4311	1	1														0.1
4312	68	3	5	1			2	1		53		1		2		5.5
4313	44	7	9	2			5	3	2		16					3.5
4321	3	1						1		1						0.2
4322	1										1					0.1
4323	13	1	1				1	2		8						1.0
434	1														1	0.1
4412	9		1	1						7						0.7
4413	7			1					1	5						0.5
4422	1							1								0.1
4423	4		1				2			1						0.3
4433	1		1													0.1
514	10												1	6	3	0.8
5311	1		1													0.1
5312	14	2	1		1		4	5		1						1.1
5313	237	10	15	4			45	155	6					2		19.0
5322	2							2								0.2
5323	11	1	1				1	7	1							0.9
5333	1							1								0.1
534	16												5	7	4	1.3
5413	11		1				1	8	1							0.9
5422	6		1				1	3		1						0.5
5423	12		3				1	8								1.0
544	1														1	0.1
5523	2						1	1								0.2
6312	1							1								0.1
6313	66		22	5			14	25								5.3
6323	1		1													0.1
6333	3			1			1	1								0.3
6413	1							1								0.1
6422	6							5	1							0.5
6423	2							2								0.2
Total n	1245	104	454	169	6	8	94	247	14	78	17	2	8	26	19	100

Table 7.6 Selection of features containing type H IB-h2. Dates are based on the stratigraphy, combined with dated finds. The finds from any single context may have several find numbers.

feature	context	starting date	end date	find no.	pottery (minimum number of pots)
374	Ditch/pit	850	900	2923 7325 7327	CWII-2; CWIIA-9 (2x); CWIIIA-9; CWIV-1; CWIV-2; H IA-h1 (2x); H IA-h2 (3x); H IB-h1 (3x); H IB-h2 (3x); H IB-h3 (3x)
403	Well 5 (core)	800	850	390 501	Kwt; w1; w2; w8; w9; CWIX; H IB-h2; CWIIIC
445	Ditch/pit	850	900	4650 4651	CWIIIA-4 (2x); CWIV-2; w8; w9; w12; H IA-h1; H IB-h2; H IB-h3; H III
447	Ditch	850	900	1635	H II-h2, H IB-h2 (3x)
455	Old surface	850	900	830	H IA-h1; H IB-h2
463	Well 3	850	900	828 1636 4579 4707 4824-27	W1; w2; w9; w10; H IA-h1 (3x); H IA-h2 (4x); H IB-h2 (3x); H IB-h3; H IC-h2
982	Pit/ditch	800	900	660	H IB-h1; H IB-h2
997	Construction pit of well 7	800	900	715 995 1446 5359 5995	Kwt; CWIII-2; w1; w2; w9; w10; w12; H III (3x); H IA-1 (3x); H IA-h3; H IB-h2; H IB-h3
998	Surface/waste	800	900	720	Kwt; MWIF3; H IB-h2; H IB-h3
1004	Sod layer/old surface	800	900	643	H IB-h1; H IB-h2
1036	Pit/ditch	800	900	654 1008 1010	w2; w12; H IA-h1; H IB-h2; H IB-h3
1166	Sodlayer, surface	700	750	1527	MWIA4; w9; H III-h1(5x); H IA-h2 (2x); H IB-h2 (2x)
1651	Ditch/waste	800	850	7326	w8; w9; H IC-h1; H IB-h2 (2x); H IB-h3
1680	Sod layer	800	850	7373	CWIIIA-12 (3x); CWIVA-2 (2x); H IA-h1 (10x); H IB-h2 (3x); H IB-h3; H IC-h1; H IC-h3
2605	Waste layer	800	850	3695	w2; w9; w10; H IA-h1 (2x); H IB-h2 (2x); H IB-h3
2676	Old surface	800	850	3651	CWIIIC-2; w9; w10; w12; H IA-h1; H IB-h2; H IB-h3
2701	Old surface	800	850	3627	Kwt; CWIV-9; H IA-h2; H IB-h2 (2x); H IB-h3 (2x)
2707	Old surface	800	850	3631	CWI-10; CWIII-2; CWIII-12; H IA-h2; H IB-h2 (3x)
2708	Old surface	800	850	3641	CWIIIC-2; w9; w10; w12; H IA-h1; H IB-h2; H IB-h3
2709	Old surface	800	850	3628	w9'H IB-h2
2713	Large pit	800	850	3505 3507	CWIII-2; H IA-h1; H IB-h2
3137	Well/pit	800	900	7712 7715	w10; H IB-h2 (3x)
3218	Old surface	850	900	6840 6849	H IA-h1; H IA-h2; H IB-h2; Pingsdorf
3269	Surface/waste	800	850	7262 7363	CWIIIA-4 (3x); CWIIIA-12; CWIV (5x); H IA-h1 (9x); H IA-h2 (2x); H IB-h1; H IB-h2 (9x); H IB-h3 (9x); H IC-h1 (2x); H IC-h3; H II
3270	Old surface	850	900	8164	CWIIICy-2; CWIVA-2; H IA-h1 (5x); H IA-h2; H IB-h2 (2x); H IB-h3 (5x); Pingsdorf
3300	Old surface	800	850	7501 8085	CWI-2; CWIIIC-2; CWIIIA (3x); CWTVA-2; H IA-h1 (4x); H IA-h2 (6x); H IB-h2 (21x); H IB-h3 (15x); H II-h3
3328	Old surface	800	850	7952	CWI-2; CWIV-2; w9; w12; H IA-h1 (2x); H IB-h2 (3x); H IB-h3 (7x)
3351	Ditch	850	900	7170 7199 7218 7993	H IA-h2 (2x); H IB-h2 (2x)
3356	Old surface	800	850	7994	CWII-2; CWIIIA-9; H IA-h1 (3x); H IA-h2 (5x); H IA-h3 (6x); H IB-h2 (6x); H IB-h3 (24x)
3357	Old surface	800	850	7972	CWIIIC-2; w4; H IA-h1; H IA-h2 (3x); H IB-h2 (5x); H IB-h3 (21x)
3393	Old surface	800	850	7724 7976	Wwt; w2; w4; w6; w9; w12; H IB-h2 (4x)
3434	Sod layer/surface	850	900	7206	Kwt; CWIII-8; H IA-h1 (2x); H IA-h2 (2x); H IB-h2 (4x); H IB-h3 (4x)
3477	Old surface	800	850	7184 7188	CWIIIC-2 (2x); H IB-h2 (2x); H IB-h3 (2x)
3520	Ditch	800	900	3367	A3; H IA-h1 (5x); H IB-h1; H IB-h2; H II-h2
3543	Ditch/surface	850	900	3382	H IA-1 (2x); H IA-h2 (2x); H IB-h1; H IB-h2; Pingsdorf
3546	Old surface	850	900	3371	H IA-h1(3x); H IB-h2 (2x)
3548	Ditch	800	900	3320	HIA-h1(5x); H IB-h2; H II-h1
3575	Posthole	850	900	3468	H IB-h2; H IC-h1

Table 7.7 Selection of features containing type H IB-h2 and other pottery. CW: Carolingian wheel-thrown; CH: Carolingian handmade.

Feature no.	Date	Total n	Total g	CW n	CW n %	CW g	CW g %	CH n	CH n %	CH g	CH g %
374	850-900	62	1,095	14	22.6	175	16.0	48	77.4	920	84.0
403	800-850	10	199	6	60.0	55	27.6	4	40.0	144	72.4
445	850-900	33	345	19	57.6	231	67.0	14	42.4	114	33.0
463	850-900	224	1,143	13	5.8	63	5.5	211	94.2	1,081	94.5
997	800-900	231	847	11	4.8	97	11.5	220	95.2	750	88.5
1036	800-900	17	118	4	23.5	12	10.2	13	76.5	106	89.8
1166	700-750	114	426	1	0.9	6	1.4	113	99.1	420	98.6
2605	800-850	55	179	11	20.0	38	21.2	44	80.0	141	79.8
2713	800-850	30	97	4	13.3	23	23.7	26	86.7	74	76.3
3137	800-900	142	809	1	0.7	1	0.1	141	99.3	808	99.9
3269	800-850	861	4,483	123	14.3	628	14.1	738	85.7	3,855	85.9
3270	850-900	241	787	33	13.7	108	13.7	208	86.3	679	86.3
3300	800-850	951	3,911	92	9.8	416	10.6	859	90.2	3,495	89.4
3356	800-850	732	3,420	24	3.3	102	3.0	708	96.7	3,318	97.0

Fig. 7.32 The ratio between wheel-thrown and handmade pottery in contexts dated to the Carolingian period. CW: Carolingian Wheel-thrown; CH: Carolingian Handmade; n = number of sherds.

(Figure 7.31).⁶¹ The Warendorf types are a combination of a variable characteristic such as the shape of the rim, with two or three constant characteristics from the three other variables: angle, transition and length of the rim. At Warendorf, type 2, a neckless bowl with an inward-curved, rounded rim, is the most common type (28.47%); it combines similar shape and angle of the rim (11--) with various forms of transition and lengths (the last two digits). It is followed by type 4 (16.47%), which is a variety of type 2 with a slightly thickened rim. These types are extremely rare at Wijnaldum. A third numerous type at Warendorf, type 10 (14.10%), is represented at Wijnaldum in more than a third of the coded pottery (combinations 1313, 2313 and 3313: 40.4%). Warendorf types 11 (9.40%) and 5 (7.25%) barely occur at Wijnaldum (0.2% and 0.1% of the coded rims). The differences between Wijnaldum

and Warendorf are probably in large measure due to the later introduction of globular pots in Germany.

Almost absent at Warendorf (type 14: 1%), but a large group (19.0%) at Wijnaldum is combination 5313, largely consisting of shell-tempered pots of type H IB; only 3.74% of the handmade pottery at Warendorf is shell-tempered.⁶² Röber presents a chronological development for Warendorf in the period between 650 and 850.⁶³ Warendorf is not a coastal settlement. The shell-tempered pots arrived there through trade and contact with the northern coastal area. It was stated above that the actual production of shell-tempered globular pots probably started around the middle of the 8th century. They must have been introduced at Warendorf soon after, probably in the third quarter of the 8th century.⁶⁴ The earlier *weiche*

⁶² Röber 1990, 17.

⁶³ Röber 1990, 75ff.

⁶⁴ Röber 1990, 79.

⁶¹ Röber 1990, 21-22.

Grauware (or Hessens-Schortens ware) was still widely used at the time.⁶⁵

This introduction seems to have had a distinct influence on the local pottery tradition. Specific characteristics dating back to the Migration Period, like burnishing, disappear; and the local potters seem to imitate the imported shell-tempered globular pots. After the introduction of shell-tempered ware, the local pots grew larger, the edges of the rims were flattened more often and the walls of the pots became thinner. After their first introduction, the amount of shell-tempered pots soon decreased significantly. This might be the result of a local development at Warendorf, when local potters started producing similar shapes in local fabrics. The Warendorf example shows that classification according to Steuer's coding system facilitates comparing pottery assemblages from different settlements, also internationally.

7.6 Associations and production

If we want to learn more about the chronological development of early-medieval pottery at Wijnaldum, especially about the introduction of shell-tempered pottery, we need to examine associations of pottery from secure contexts. Table 7.6 shows an overview of contexts with shell-tempered pottery and associated finds. Only finds from stratified features were included in the table, but still, older material often occurs in younger contexts. In terps, older material was often dug up when people dug wells, pits or ditches. In most features from the Carolingian period, handmade pottery dominates. This is in clear contrast to the Merovingian period, when most of the pottery consisted of Frankish imported wares, mostly coarse barrel jars. Many features from the Carolingian period contain very high percentages of handmade pottery, especially the larger assemblages (Table 7.7 and Figure 7.32).

Settlement features are dated by pottery and other datable finds, and by their stratigraphical position. Sherds of shell-tempered pots, especially of type H IB-h2, have been found throughout the settlement in the southern part of the terp Wijnaldum-Tjitsma (see Figures 9.12-13). Because shell-tempered ware was initially only dated to the 9th century, most features containing this ware were dated accordingly. Shell-tempered ware is very often found together with grit- and sand-tempered globular ware and with Carolingian wheel-thrown pottery, which does not give rise to a revision of this dating. Shell-tempered ware is occasionally also found together with older pottery such as H III or Merovingian wheel-thrown ware, but that older material is usually much fragmented and was probably dug up from older terp layers. Only feature 1166 (find number 1527), in which fragments of three grit-tempered H III pots and a Merovingian wheel-thrown jar are mixed with fragments of at least four globular, shell-tempered pots, is confusing. This feature was dated to the first part of the 8th century, because of the convincing evidence of 8th-century pottery and because it seemed to be

contemporary with a ditch that was dated to that period. If this association is reliable, it might be taken as an indication that shell-tempered globular ware was introduced as early as the middle of the 8th century in this part of the northern Netherlands.

Shell temper in early-medieval pottery probably originated in Ostfriesland. Shell-tempered pots were probably traded or exchanged, and transported to other settlements such as Wijnaldum and Warendorf. There does not seem to have been a constant flow of shell-tempered pottery to other areas after the first introduction. Instead, shell-tempered ceramics seem to have been imitated elsewhere. At Warendorf, the shapes and sizes of the coastal pots were imitated in local fabrics.⁶⁶ At Wijnaldum, where similar shapes were already being produced, the fabrics seem to have been imitated with locally available shells as tempering material; this might be inferred from the similarities in variants of H IA-h1 and h2. Apparently, the previously existing variants in grit-tempered ware were also copied in a shell-tempered fabric after its introduction. The softer fabric h2s might be such a local imitation, but h2 wares more closely resembling the original may also have been produced locally. The variability of the globular pots in rim shapes and sizes at Wijnaldum is suggestive of local or even domestic production. However, the clear subtypes in shell-tempered ware of type H IB indicate some degree of standardization. Which is indicative of workshop production, either at Wijnaldum or in Ostfriesland. There certainly were regular contacts between the different parts of Frisia. Small-scale importation of shell-tempered pots may have continued.

There may have been an increase in artisanal production of pottery in the late 7th and early 8th centuries, which coincides with, or is related to the strong decrease in importation of Frankish wheel-thrown pottery. After an initial phase in which both ovoid pots (H III) and globular pots (H IA) were produced, the introduction and production of shell-tempered pots may have encouraged standardization and thereby reinforced the process of professionalization, at the expense of household production. Standardization does not rule out experimenting. The imitation of shapes and sizes at Warendorf, and of fabrics and rim shapes at Wijnaldum shows that local potters were eager to learn from each other and also from examples of imported pottery such as Badorf ware.

After the introduction of shell-tempered ware, non-local tempering material such as stone grit and sand still remained in use. This shows that local availability was not a decisive factor in the choice of temper. Even in inland Dorestad, shell-tempered globular pots were used and/or produced, possibly by northern potters, or they were imported to this central trading place from the north. Rather than availability, it may have been the functional or tactile qualities of these different fabrics that were decisive in the choice of temper, or different potters or workshops specializing in different wares.

65 Verhoeven 1998, 217.

66 Röber 1990, 81ff.

Fig. 7.33 Map of early-medieval Frisia with areas indicating the percentage of shell-tempered pottery (usually Minimum Number of Individuals) from the Carolingian period. Map J. de Koning.

7.7 Conclusion

Handmade pottery from the Merovingian and Carolingian periods is the largest group of pottery at Wijnaldum, in numbers of fragments (32,197 fragments = 45.1% of the total ceramic assemblage). These fragments weigh a good 210 kg, which is a much smaller part of the total weight, 26.8%; this probably is due to the overrepresentation in weight of indigenous pottery from the Roman period. The pottery is primarily classified according to

the typology made for Dorestad by Van Es and Verwers, which assigns most of the pottery to type H I, the globular pot, and to its predecessor type H III, ovoid or Hessens-Schortens ware.⁶⁷ Smaller numbers belong to the groups of skillets (type H II), and neckless bowls (type H IV). When this pottery assemblage was examined during the

⁶⁷ Van Es & Verwers 1980.

excavations at Wijnaldum-Tjitsma, in the early 1990s, many subtypes and variants were distinguished. The resulting database makes further investigation possible.

For the present study, ideas about the origin of shell-tempered pottery were explored and vessel sizes were analysed. The alternative coding system for early-medieval pottery, developed by Steuer in 1971, was applied to a large sample of the Wijnaldum assemblage. The main question behind these analyses was whether standardized pottery types related to professionalization and workshop production can be identified in this ceramic assemblage.

The typology of Van Es and Verwers and the coding system of Steuer, combined with the analysis of sizes, show that within the seemingly homogeneous group of type H I pots, there is more than meets the eye. Within this group some specific subtypes are recognizable. The distinction made by the Dorestad typology between type H IA on the one hand, and types H IB and C on the other, seems justified. H IA pots are very similar, in fabric and rim shape, to their ovoid predecessor H III. They coexisted through part of the 8th century, as associations in many contexts have shown. This was also the case with the handmade pottery from Den Burg-Beatrixlaan on the island of Texel, across the Vlie, the marine inlet that separated the present-day provinces of Friesland and Noord-Holland.⁶⁸ The production of shell-tempered H IB pots seems to have been the next step in production, starting along the northeastern Frisian coast. Proof of local production of shell-tempered pots was found at Hesel in Ostfriesland (see section 7.2).

The distribution of shell-tempered pots indicates that the epicentre of production must be sought in Ostfriesland, where almost 100% of the pottery is shell-tempered (e.g. at Emden; Figure 7.33). Wijnaldum, with a 40% share of shell-tempered globular pottery, may be the western-most production site of shell-tempered pottery, or it was an important hub along the Frisian trade route between the northern German and Scandinavian emporia and Dorestad. Once at Wijnaldum, this ware may have been distributed further along the coast and inland waterways to settlements such as Den Burg, Medemblik or Dorestad. On the other side of the Vlie, at Den Burg-Beatrixlaan, only 12% of the handmade pottery from the Carolingian period is shell-tempered. This percentage is probably too small to indicate local production. In the western part of Frisia (present-day Noord-Holland), these percentages are even smaller, varying from 3% (Medemblik) to 10% (Limmen-De Krocht). At Dorestad, as much as 48% of shell-tempered ware was found, which suggests that this was a popular commodity; indeed part of the shell-tempered globular pots may have been produced there.

The production of shell-tempered ware may be considered a step towards professionalization of handmade pottery. These pots were more standardized than grit-tempered globular pots, and were produced on a much larger scale. Whether or not globular pots were superior as cooking pots to Frankish wheel-thrown ware, a strong increase in

demand for globular pots at the expense of wheel-thrown Frankish ware is evident. They were traded within the Frisian commercial network, undoubtedly together with archeologically near-invisible products such as meat, leather and Frisian cloth.

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Wijnaldum is nowadays an unassuming rural village in the north of the province of Friesland, no more than a small dot on the map of the Netherlands. But during the Early Middle Ages, this probably was a lively political centre, a kingdom, with intensive contacts with other kingdoms along the North Sea coasts, and with the Frankish realm to the south. The search for the king that resided at Wijnaldum was the major goal of the excavations that were carried out at the terp Wijnaldum-Tjitsma between 1991 and 1993. These excavations yielded a wealth of information, although tangible remains of the king or a royal residence were not found. What was found was a lot of pottery. The ceramic assemblage from the first Millennium consists of local handmade and imported wheel-thrown pottery, revealing contacts with the wider world.

The first results and an overview of the habitation phases were published in 1999, in Volume 1 of *The Excavations at Wijnaldum*. The ceramic assemblage, and its consequences for the habitation history of Wijnaldum, are the main subjects of this second volume of *The Excavations at Wijnaldum*.

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